

# Amphibia, Centrolenidae, *Centrolene antioquiense* (Noble, 1920): New records and geographical distribution in Colombia

Mauricio Rivera-Correa

Pontifícia Universidade Católica do Rio Grande do Sul, Programa de Pós-Graduação em Zoologia, Faculdade de Biociências. Avenida Ipiranga 6681. CEP 90619-900. Porto Alegre, RS, Brazil.  
Universidad de Antioquia, Grupo Herpetológico de Antioquia, Instituto de Biología. Calle 67 # 53-108, Bloque 7-121, A.A. 1226. Medellín, Colombia.  
E-mail: [mauricio.rivera@acad.pucrs.br](mailto:mauricio.rivera@acad.pucrs.br)

**ABSTRACT:** The current work provides three new localities for *Centrolene antioquiense* (Noble, 1920), a small centrolenid endemic to Colombia and known for just four sites. An updated diagnosis and life pictures of this species are also presented. *Centrolene antioquiense* apparently inhabits the canopy of montane forest and its natural habitat has been severely reduced due to deforestation.

The genus *Centrolene* currently contains 23 described species which are distributed across the northern Andes, from the Cordillera of Mérida in Venezuela, across the Andes of Colombia and Ecuador, to the Cordillera of Huancabamba in northern Peru, between 1,100–3,500 m (Guayasamin *et al.* 2009). *Centrolene antioquiense* (Noble, 1920) is a small centrolenid species (Figure 1) endemic to Colombia. It was originally described from a single locality (Mesopotamia, departamento de Antioquia) on the Cordillera Central of Colombia (Noble 1920; Frost 2009). Ruiz-Carranza and Lynch (1997) expanded its distribution to three additional municipalities in Colombian (Yarumal, departamento de Antioquia; Pensilvania, departamento de Caldas; and Libano, departamento de Tolima). Based on data obtained during recent field trips and revision of scientific collections herein I provide three new localities for *Centrolene antioquiense*, that increase its geographic range, together with an updated diagnosis and life pictures.

The new localities of *Centrolene antioquiense* (Figure 2) are as follows (all in Colombia): Departamento de Antioquia: municipio de Anorí, vereda El Retiro (6°58'55" N, 75°08'07" W; 1,730–1,825 m): three adult males (Museo de Herpetología, Universidad de Antioquia, MHUA 2475, 3470–71); vereda El Roble (06°58'50" N, 75°06'44" W; 1,732–1,787 m): 14 adult specimens (MHUA 3464–69, 3472, 3569, 3910–11, 4788–91). Departamento de Tolima: municipio de Falan, vereda el Llano: finca La Lulera (05°05' N, 75°04' W, 1,795 m): two adult males (TG 2063-4, T. Grant field numbers; to be deposited at the Instituto de Ciencias Naturales, Universidad Nacional de Colombia); municipio de Ibagué: corregimiento de Toche, vereda Alisal-Santa Rita: San Juan stream (04°31' N, 75°24' W; 2,073 m): two adult males (Colección de Zoología, Universidad del Tolima, CZUT-A 227-8).

*Centrolene antioquiense* (Figure 1A and 1B) is characterized by the following traits: (1) vomerine teeth absent; (2) snout rounded in dorsal view, sloping in lateral profile; (3) tympanum orientated laterally,

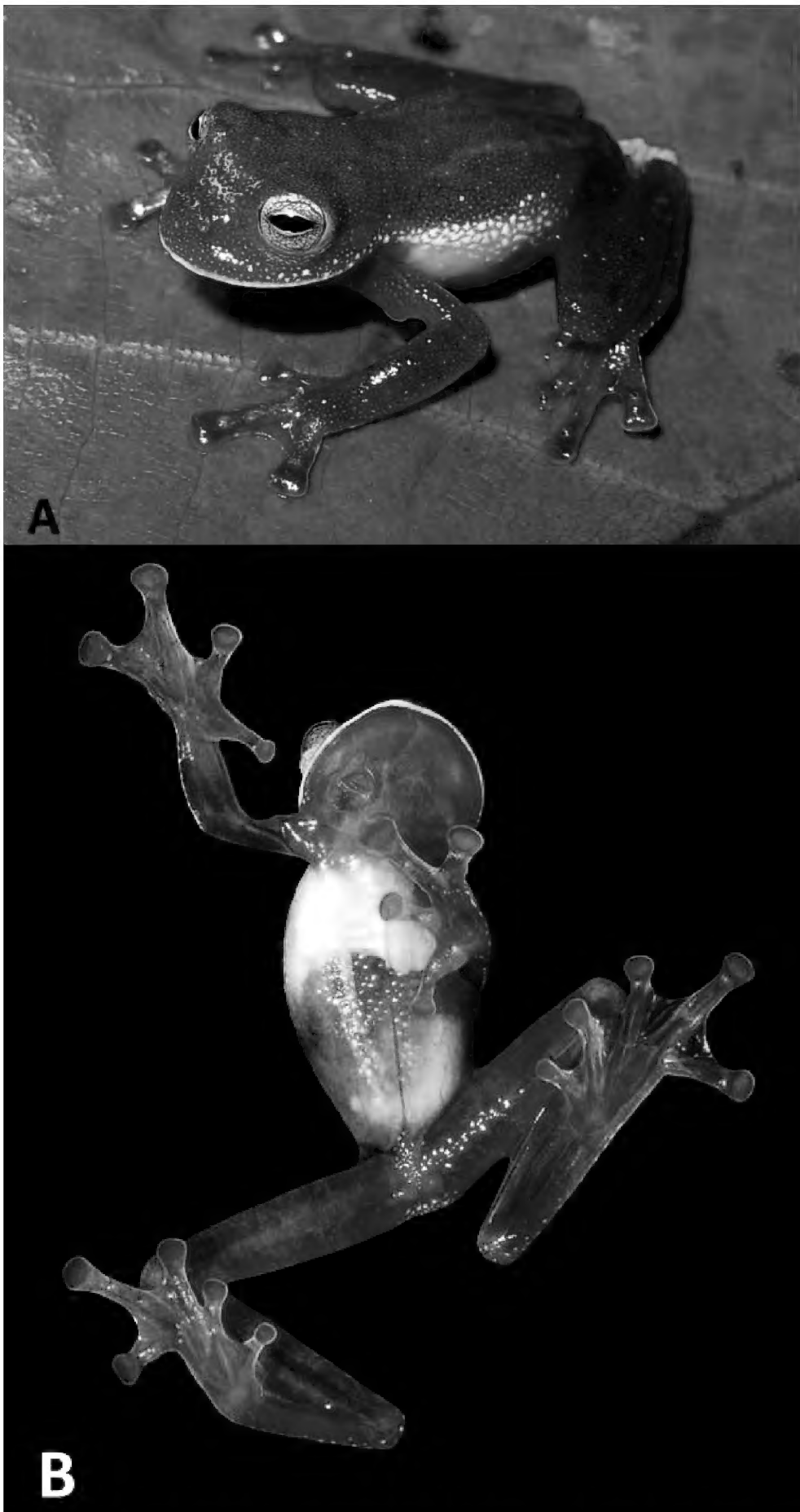
tympanic annulus completely visible; (4) dorsal skin finely shagreened; (5) pericloacal region with small tubercles enameled present, cloacal fold absent; (6) in preservative, anterior 1/3 parietal peritoneum covered by iridophores (not transparent), pericardium, gastric and intestinal peritonea covered by iridophores (enameled white), hepatic peritoneum transparent; (7) humeral spine in adult males present; (8) webbing absent between fingers I and II; webbing between outer fingers reduced, II 3<sup>+</sup> – 4<sup>1/4</sup> III 3<sup>+</sup> – 2 IV; (9) webbing formula on foot I 2 – 2<sup>2/3</sup> II 1 – 3<sup>+</sup> III 2 – 3<sup>+</sup> IV 3<sup>+</sup> – 1 V; (10) outer ulnar fold enameled and outer tarsal fold absent but small tubercles enameled present; (11) nuptial excrescences type-I; (12) upper lip white, dorsolateral section of body with enameled warts extending from the lower edge of the eye to the groin; (13) in life, dorsum yellowish green with scattered yellow and white spots, bones green in life; (14) in preservative, lavender with scattered white spots and flecks; (15) iris white grayish with blue dots, gold spots and fine blue reticulations; (16) adult males SVL 20.5 – 22.5 mm (X = 21.5 mm, SD = 1.0, N = 22), SVL unknown in adult females.

Recent research on glassfrogs has substantially increased our understanding of their evolution, systematics and taxonomy (see Cisneros-Heredia and McDiarmid 2007; Guayasamin and Trueb 2007; Guayasamin *et al.* 2008; 2009). However there are still gaps in our basic knowledge of their geographical distribution, mainly in the Andean region of Colombia. The new records of *Centrolene antioquiense* presented herein are important geographic extensions, representing the northernmost and southernmost localities for the species (ca. 32 km NW from Yarumal, and ca. 60 km S of Libano).

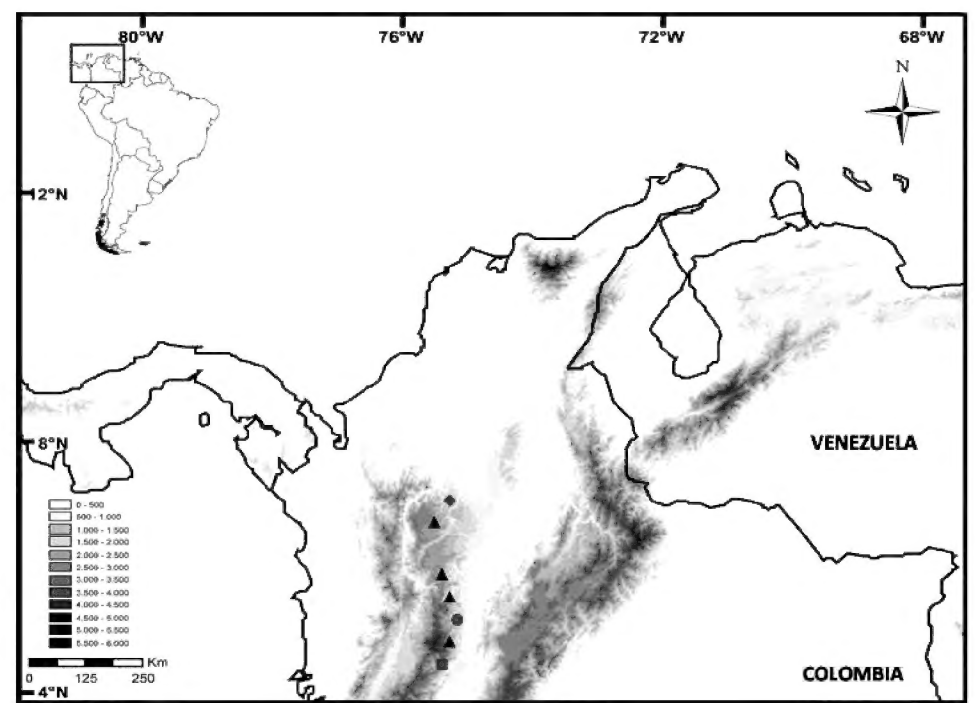
*Centrolene antioquiense* has been considered a rare species, and few vouchers have been deposited at scientific collections. The species seems to be difficult to find because it apparently inhabits the canopy of montane forest and its natural habitat has been severely reduced due to deforestation (Ruiz-Carranza and Lynch 1997)

and for this reason, the species is considered under the category of Near Threatened by IUCN (Bolivar and Lynch 2004; Stuart *et al.* 2008).

*Centrolene antioquiense* is closely related to *C. peristictum* (Ruiz-Carranza and Lynch 1997; Guayasamin *et al.* 2008). Both species show a high degree of similarity in their external morphology, and a thorough taxonomic evaluation may change our understanding on this interesting and poorly known glassfrog species of Colombia (M. Rada personal communication).



**FIGURE 1.** (A) Dorsolateral view and (B) ventral view of *Centrolene antioquiense*, adult male (21.2 mm SVL) from finca La Lulera, vereda el Llano, municipio de Falan, Departamento de Tolima, Colombia. Photos by M. Rivera-Correa and T. Grant respectively.



**FIGURE 2.** Distribution of *Centrolene antioquiense* in Colombia, showing previous known localities (black triangles) and new records presented herein: municipio de Anorí (green diamond), departamento de Antioquia; municipio de Falan (green circle), and municipio de Ibague (green square), departamento de Tolima.

**ACKNOWLEDGMENTS:** I thank to V. Luna and O. Gallego for field assistance and hospitality during fieldtrip in Tolima. I thank S. Castroviejo for valuable comments to the manuscript. M. Rada provided detailed locality data for CZUT specimens. For access to collections, I am indebted to V. Páez (MHUA), and M. Vejarano and M. Bernal (CZUT). Partial financial support was provided by The Organization for Tropical Studies (grant post-course OTS, 2004-13) and Programa de Becas para la Iniciativa de Especies Amenazadas IEA “Jorge Hernandez Camacho” (convenios 520, 245-2, CO 310, y CO 522). This work resulted from the project “The Colombian Amphibians and Reptiles Expedition 2008”, coordinated by T. Grant and M. Rada and authorized by Ministerio de Ambiente, Vivienda, Desarrollo Territorial of Colombia (license 03-7/03/08). Scholarship grant was provided by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

#### LITERATURE CITED

- Bolívar W. and J. Lynch. 2004. *Centrolene antioquiense*. In: IUCN 2009. *IUCN Red List of Threatened Species. Version 2009.1*. <www.iucnredlist.org>. Captured on 24 May 2009.
- Cisneros-Heredia, D.F. and R.W. McDiarmid. 2007. Revision of the characters of Centrolenidae (Amphibia: Anura: Athesphatanura), with comments on its taxonomy and the description of new taxa of glassfrogs. *Zootaxa* 1572: 1-82.
- Frost, D.R. 2009. *Amphibian Species of the World: an Online Reference. Version 5.3*. Eletronic Database accessible at <http://research.amnh.org/herpetology/amphibia/index.html>. American Museum of Natural History, New York, USA. Captured on 30 May 2009.
- Guayasamin, J.M. and L. Trueb. 2007. A new species of glassfrog (Anura: Centrolenidae) from the lowlands of northwestern Ecuador, with comments on centrolenid osteology. *Zootaxa* 1447: 27-45.
- Guayasamin, J.M., S. Castroviejo-Fisher, J. Ayarzagüena, L. Trueb and C. Vilà. 2008. Phylogenetic relationships of glassfrogs (Centrolenidae) based on mitochondrial and nuclear genes. *Molecular Phylogenetics and Evolution* 48 (2008): 574-595.
- Guayasamin, J.M., S. Castroviejo-Fisher, L. Trueb, J. Ayarzagüena, M. Rada and C. Vilà. 2009. Phylogenetic systematics of glassfrogs (Amphibia: Centrolenidae) and their sister taxon *Allophryne ruthveni*. *Zootaxa* 2100: 1-97.
- Ruiz-Carranza, P.M. and J.D. Lynch. 1997. Ranas Centrolenidae de Colombia X. Los centrolénidos de un perfil del flanco oriental de la Cordillera Central en el Department of Caldas. *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales* 21 (81): 541-553.
- Stuart, S.N., M. Hoffman, J.S. Chanson, N.A. Cox, R.J. Berridge, P. Ramani and B.E. Young. 2008. *Threatened Amphibians of the World*. Barcelona: Lynx Edicions. 758 p.

RECEIVED: November 2009

REVISED: January 2010

ACCEPTED: March 2010

PUBLISHED ONLINE: April 2010

EDITORIAL RESPONSIBILITY: Diego F. Cisneros-Heredia